

August 1, 1997.

Replace the paragraph beginning on page 1, line 4 with the following paragraph:

The present application is related to commonly assigned U.S. Patent No. 6,009,355.

Replace the paragraph beginning on page 13, line 21 with the following paragraph:

In addition to directing the user to a given destination, system 329 through processor 103 cooperates with weather system 332 and traffic system 336 to be described. In accordance with an aspect of the invention, systems 332 and 336 jointly provide on display 205 updates regarding traffic congestions, weather conditions, hazards, highway warnings along the route suggested by system 329.

Replace the paragraph beginning on page 20, line 21 with the following paragraph:

At this point, the user may touch the screen of display 205 to define a parking space into which the vehicle is to be parked. In order to carry out parallel parking effectively, this parking space needs to be reasonably suitable for the vehicle to be maneuvered into. Processor 103 at step 547 computes the coordinates defining the selected parking space. Knowing the respective coordinates of the subject vehicle, the surrounding objects and the parking space, processor 103 at step 551 determines the instants at which and extents to which the vehicle is to be accelerated and decelerated in the course of the parking, and at step 553 the instants at which and extents to which the steering wheel is to be turned and returned. At step 555, processor 103 causes a computer simulation to be performed using the speed and steering parameters just determined to verify that the automatic parking is feasible, without running into any surrounding objects. At that point, the user may depress ANIMATION key 219j to view on display

205 the simulation in which the subject vehicle moves into the user defined parking space in an animated fashion. At step 559 processor 103 determines whether the vehicle can be properly parked under the above conditions. If processor 103 determines that the automatic parking is unrealizable, processor 103 informs the user of same, as indicated at step 563. In response, the user needs to select another parking space or may attempt to park the vehicle manually.

Replace the paragraph beginning on page 31, line 11 with the following paragraph:

In addition, a SMART WINDOWS function on sub-screen 840 may be selected by touching ON option 842 on the screen or pointing and clicking at same. With the SMART WINDOWS function selected, for example, subsystem 139 causes the windows to be completely closed upon a shut-off of the engine or an activation of air conditioning. When coupled with a SMART CLIMATE function to be described, the SMART WINDOWS function includes slightly opening selected windows to vent out excess heat prior to the user's arrival, thereby pre-conditioning the vehicle. In addition, when an AUTO function on sub-screen 840 is selected, the user can specify the vehicle speed at which the driver side front window is made completely open or closed. By touching on the screen, or pointing and clicking at blank 845 or blank 850, choices of speed are listed beneath the blank. For example, by selecting a zero speed for blank 845 ahead of a toll plaza, the window in question would be completely opened when the vehicle stops at a toll booth, thereby conveniently allowing the user to pay tolls.

IN THE CLAIMS

Cancel claims 1-20.

Add claims 21-84 as follows:

21. An information system for use in a vehicle comprising:
a navigation device for providing data concerning a route;
a display for showing the route thereon based on the data; and
a processor for obtaining information about at least one weather condition on the route, the processor providing on the display an indicator indicative of the weather condition based on the information.
22. The system of claim 21 wherein the indicator is provided adjacent to a part of the shown route to which the weather condition pertains.
23. The system of claim 21 wherein the data includes global positioning system (GPS) data.
24. The system of claim 21 wherein the display includes a liquid crystal display (LCD).
25. The system of claim 21 wherein travel advisories based on the weather condition are provided.
26. The system of claim 21 wherein the indicator is indicative of a cloudy condition.
27. The system of claim 21 wherein the indicator is indicative of a rainy condition.

28. The system of claim 21 wherein the indicator is indicative of a foggy condition.

29. The system of claim 21 wherein the information is obtained through a wireless connection.

30. The system of claim 21 wherein the information is provided by a radar system.

31. The system of claim 21 wherein the information is provided by a satellite system.

32. An information system for use in a vehicle comprising:
a navigation device for providing data concerning a route;
a display for showing the route thereon based on the data; and
a processor for obtaining information about at least one traffic condition on the route, the processor providing on the display an indicator indicative of the traffic condition based on the information.

33. The system of claim 32 wherein the indicator is provided adjacent to a part of the shown route to which the traffic condition pertains.

34. The system of claim 32 wherein the data includes GPS data.

35. The system of claim 32 wherein the display includes an LCD.

36. The system of claim 32 wherein the indicator is indicative of a traffic congestion.

37. The system of claim 32 wherein the information is obtained through a wireless connection.

38. The system of claim 32 wherein the information is provided by a radar system.

39. An information system for use in a vehicle comprising:
a display for showing a map including a first indicator thereon indicative of a location of the vehicle;
an interface for selecting an area on the map; and
a processor for obtaining information concerning at least one weather condition in the area, the processor providing on the display at least a second indicator indicative of the weather condition based on the information.

40. The system of claim 39 wherein the second indicator is provided in a part of the area to which the weather condition pertains.

41. The system of claim 39 wherein the weather condition corresponds to a selected time.

42. The system of claim 39 wherein travel advisories based on the weather condition are provided.

43. The system of claim 39 wherein the interface includes an indicating device.
44. The system of claim 39 wherein the interface includes a voice capability.
45. The system of claim 39 wherein the processor also provides on the display a third indicator for selection, a selection of which causes generation of a weather report concerning an area associated with the third indicator.
46. The system of claim 39 wherein the second indicator is indicative of a temperature.
47. The system of claim 39 wherein the second indicator is indicative of a cloudy condition.
48. The system of claim 39 wherein the second indicator is indicative of a rainy condition.
49. The system of claim 39 wherein the second indicator is indicative of a foggy condition.
50. The system of claim 39 wherein the information is obtained through a wireless connection.
51. The system of claim 39 wherein the information is provided by a radar system.

52. The system of claim 39 wherein the information is provided by a satellite system.

53. An information system for use in a vehicle comprising:
a display for showing a map including a first indicator thereon indicative of a location of the vehicle;
an interface for selecting an area on the map; and
a processor for obtaining information concerning at least one traffic condition in the area, the processor providing on the display at least a second indicator indicative of the traffic condition based on the information.

54. The system of claim 53 wherein the second indicator is provided in a part of the area to which the traffic condition pertains.

55. The system of claim 53 wherein the interface includes an indicating device.

56. The system of claim 53 wherein the interface includes a voice capability.

57. The system of claim 53 wherein the processor also provides on the display a third indicator for selection, a selection of which causes generation of a traffic report concerning an area associated with the third indicator.

58. The system of claim 53 wherein the second indicator is indicative of a traffic congestion.

59. The system of claim 53 wherein the information is obtained through a

wireless connection.

60. The system of claim 53 wherein the information is provided by a radar system.

61. A method for use in an information system in a vehicle, the information system including a display, the method comprising:
providing data concerning a route;
showing the route on the display based on the data;
obtaining information about at least one weather condition on the route; and
providing on the display an indicator indicative of the weather condition based on the information.

62. The method of claim 61 wherein the indicator is provided adjacent to a part of the shown route to which the weather condition pertains.

63. The method of claim 61 wherein the data includes GPS data.

64. The method of claim 61 further comprising providing travel advisories based on the weather condition.

65. The method of claim 61 wherein the indicator is indicative of a cloudy condition.

66. The method of claim 61 wherein the indicator is indicative of a rainy condition.

67. The method of claim 61 wherein the indicator is indicative of a foggy condition.

68. A method for use in an information system in a vehicle, the information system including a display, the method comprising:
providing data concerning a route;
showing the route on the display based on the data;
obtaining information about at least one traffic condition on the route; and
providing on the display an indicator indicative of the traffic condition based on the information.

69. The method of claim 68 wherein the indicator is provided adjacent to a part of the shown route to which the traffic condition pertains.

70. The method of claim 68 wherein the data includes GPS data.

71. The method of claim 68 wherein the indicator is indicative of a traffic congestion.

72. A method for use in an information system in a vehicle, the information system including a display, the method comprising:
showing on the display a map including a first indicator thereon indicative of a location of the vehicle;
selecting an area on the map;
obtaining information concerning at least one weather condition in the area; and
providing on the display a second indicator indicative of the weather condition

based on the information.

73. The method of claim 72 wherein the second indicator is provided in a part of the area to which the weather condition pertains.

74. The method of claim 72 wherein the weather condition corresponds to a selected time.

75. The method of claim 72 further comprising providing travel advisories based on the weather condition.

76. The method of claim 72 further comprising providing on the display a third indicator for selection, a selection of which causes generation of a weather report concerning an area associated with the third indicator.

77. The method of claim 72 wherein the second indicator is indicative of a temperature.

78. The method of claim 72 wherein the second indicator is indicative of a cloudy condition.

79. The method of claim 72 wherein the second indicator is indicative of a rainy condition.

80. The method of claim 72 wherein the second indicator is indicative of a foggy condition.

81. A method for use in an information system in a vehicle, the information system including a display, the method comprising:

showing a map on the display including a first indicator thereon indicative of a location of the vehicle;

selecting an area on the map;

obtaining information concerning at least one traffic condition in the area; and

providing on the display a second indicator indicative of the traffic condition based on the information.

82. The method of claim 81 wherein the second indicator is provided in a part of the area to which the traffic condition pertains.

83. The method of claim 81 further comprising providing on the display a third indicator for selection, a selection of which causes generation of a traffic report concerning an area associated with the third indicator.

84. The method of claim 81 wherein the second indicator is indicative of a traffic congestion.

Remarks

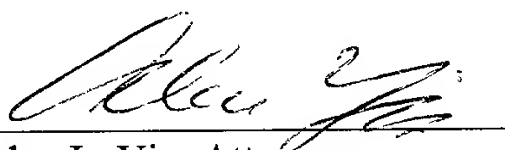
The present application is a continuation of application Serial No. 08/904,855, filed on August 1, 1997. The specification has been amended to reflect such a priority claim. It has also been amended to correct typographical errors. Marked-up copies of pages 1, 13, 20 and 31 of the specification reflecting the amendments are enclosed. In addition, Figs. 14, 16 and 18 have been amended to correct typographical errors. Accordingly, marked-up copies of these figures with corrections in red are enclosed, along with a Letter to the Official Draftsperson.

Applicant has cancelled claims 1-20. Claims 21-84 have been added which are drawn to various aspects of the invention.

In addition, applicant brings to the Examiner's attention the references listed on the attached Form PTO-1449 (12 pages). Pursuant to 37 C.F.R. 1.98(d), copies of these references are not enclosed as they were previously cited by or transmitted to the U.S. Patent and Trademark Office in the parent application identified above. It is respectfully requested that the listed references be made of record in the present application.

Respectfully,

Michael L. Obradovich

By 
Alex L. Yip, Attorney
Reg. No. 34,759
212-836-7363

Date: July 6, 2001
Enclosures

M. L. Obradovich 2

CENTRALIZED CONTROL AND
MANAGEMENT SYSTEM FOR AUTOMOBILES

This application is a continuation of application Serial No. 08/904,855, filed on August 1, 1997.
Statement of Related Applications

The present application is related to ~~copending,~~
5 commonly assigned U.S. Patent ~~Application Serial No. 08/789,934,~~ *6,009,355.*
~~entitled "Multimedia Information and Control System for Automobiles."~~

Field of the Invention

10 The invention relates generally to control and management systems and, more particularly, to a system for use in an automobile which facilitates the user's control and management of various vehicle functions.

Background of the Invention

15 The concept of an automated highway system (AHS) has been fervently pursued. Although the interpretation of the AHS concept varies from one person to another, people implementing the concept are incorporating more and more technology into an automobile to improve its operations, better its safety measures, and add conveniences to the
20 vehicle user.

A prevalent interpretation of the AHS concept is hands-free driving. To that end, magnets have been buried along an experimental automated highway, and automobiles have been equipped with magnetometers to sense the magnets
25 to guide the moving vehicles, thereby obviating manual steering. In another approach, an automobile is equipped with a video system in which cameras monitor different segments of the road ahead and feed images to on-board computers that control steering, acceleration and braking of
30 the vehicle.

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detected by processor 103, the user is elicited for information concerning the destination, any intermediate stops, etc. Such elicitation is realized by posing questions on display 205 and/or by uttering those questions using a synthesized voice through an audio output. The user then provides verbal responses thereto through an audio input. Relying on standard speech recognition circuitry in system 100, navigation system 329 recognizes and registers the responses. Using stored map information, system 329 then provides on display 205 a suggested route leading to the destination. Furthermore, based on the knowledge of the vehicle's instantaneous speeds and directions, system 329 is capable of verbally and visually directing the user to the destination.

Because of the limited capacity of the storage for the map information or because the map information needs to be updated from time to time, it will be appreciated that system 329 would instead obtain the necessary, latest map information from an on-line service through a cellular or wireless connection.

In addition to directing the user to a given destination, system 329 through processor 103 cooperates with weather system 332 and traffic system 336 to be described. In accordance with an aspect of the invention, systems 332 and 336 jointly ^{provide} ~~provides~~ on display 205 updates regarding traffic ^{Congestions} ~~congestion~~, weather conditions, hazards, highway warnings along the route suggested by system 329.

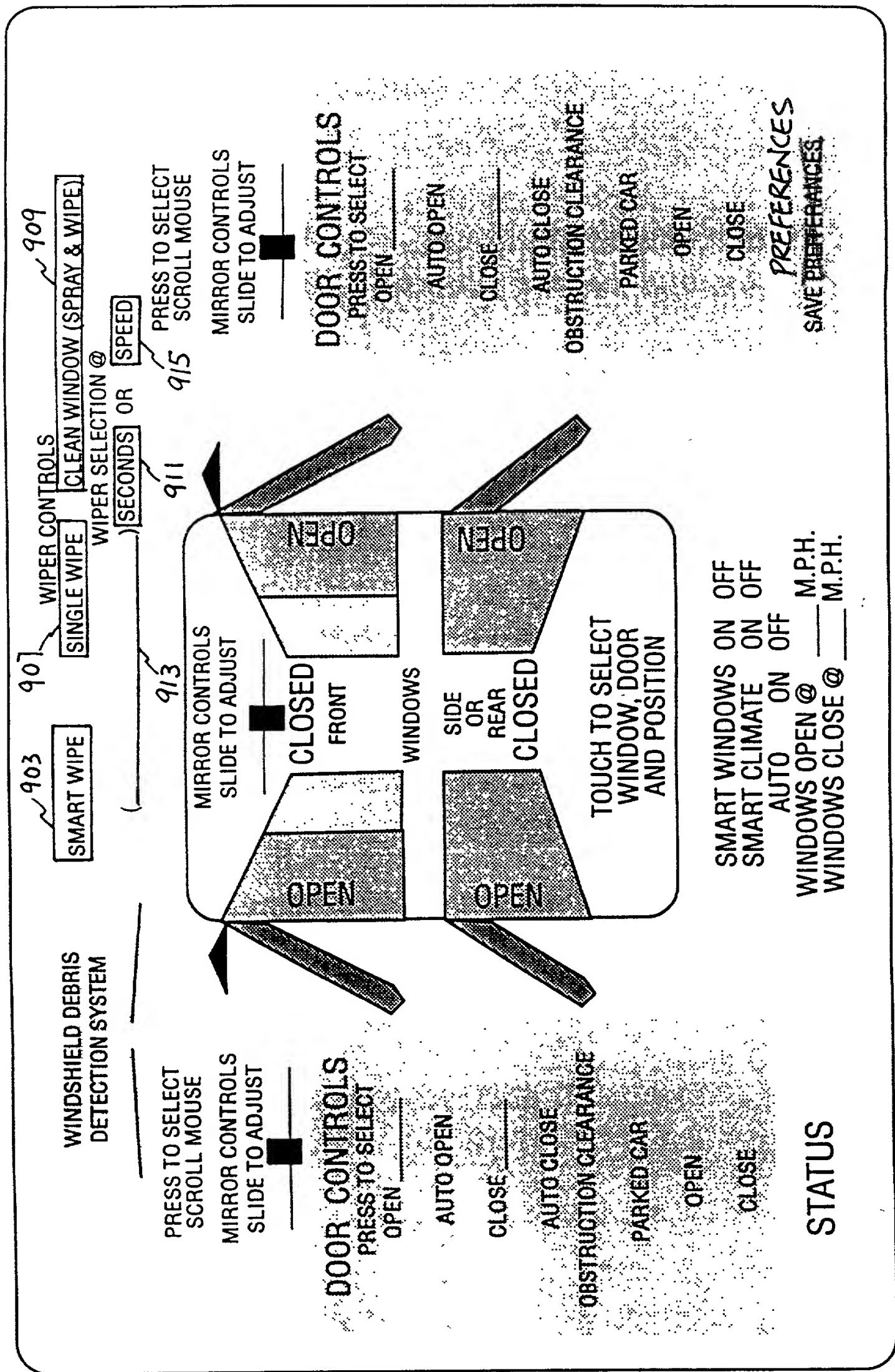
Fig. 6 illustrates one such navigation screen on display 205. On this screen, indicator 450 marks the current position of the vehicle. The suggested route (shown in boldface) by navigation system 329 is numerically denoted 453. Traffic indicator 455 is provided by system 336 to

complete stop, automatic parking routine 500 stored in memory 107 is invoked. When instructed by this routine, which is depicted in Fig. 9, processor 103 causes display 205 to show thereon the positions of the surrounding objects
5 relative to the subject vehicle, as indicated at step 543.

At this point, the user may touch the screen of display 205 to define a parking space into which the vehicle is to be parked. In order to carry out parallel parking effectively, this parking space needs to be reasonably
10 suitable for the vehicle to be maneuvered into. Processor 103 at step 547 computes the coordinates defining the selected parking space. Knowing the respective coordinates of the subject vehicle, the surrounding objects and the parking space, processor 103 at step 551 determines the
15 instants at which and extents to which the vehicle is to be accelerated and decelerated in the ~~cause~~^{COURSE} of the parking, and at step 553 the instants at which and extents to which the steering wheel is to be turned and returned. At step 555, processor 103 causes a computer simulation to be performed
20 using the speed and steering parameters just determined to verify that the automatic parking is feasible, without running into any surrounding objects. At that point, the user may depress ANIMATION key 219j to view on display 205 the simulation in which the subject vehicle moves into the
25 user defined parking space in an animated fashion. At step 559 processor 103 determines whether the vehicle can be properly parked under the above conditions. If processor 103 determines that the automatic parking is unrealizable, processor 103 informs the user of same, as indicated at step
30 563. In response, the user needs to select another parking space or may attempt to park the vehicle manually.

Otherwise if processor 103 determines that the

Fig. 14

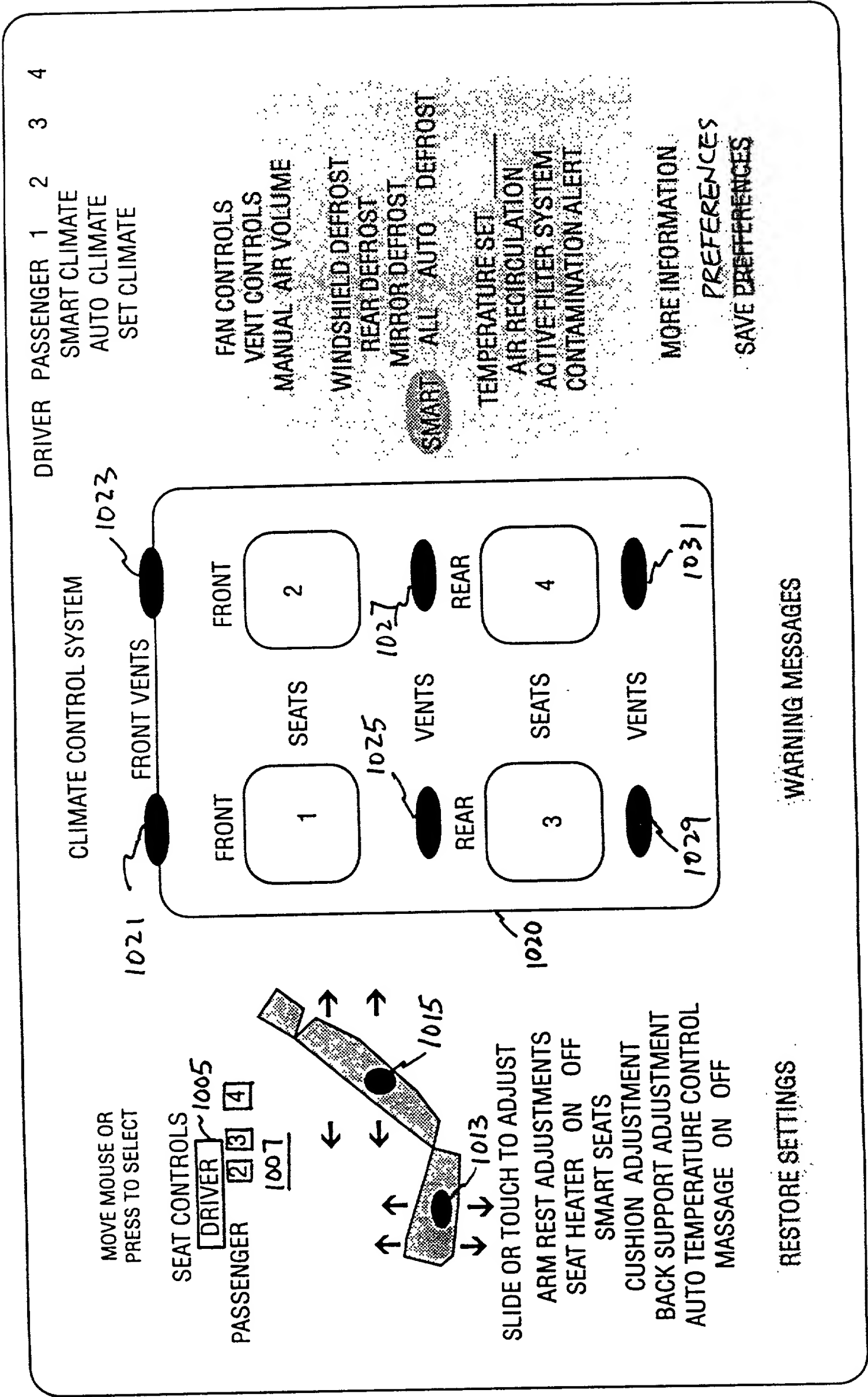


SHIFT



Fig. 16

QUICK TIPS VOICE VISUAL



SELECTIONS FROM
MENU OR SCREEN

QUICK TIP: PRESS
ANIMATION TO HEAR AND
SEE DEMO

ANIMATION VOICE
MORE INFORMATION USER ICON

AUDIO SYSTEM RADIO CASSETTE CD VIDEO TV WEATHER BAND

RADIO STATIONS: XX LOS ANGELES, XX SANTA ANA STATIONS
X IRVINE

SAVE AREA SETTINGS YES NO

SELECTION BEING PLAYED:

XX SONG, XX ALBUM

SET FOR: DRIVER

PASSENGER 1 2 3 4 5

1247 1249

1245

ON OFF VOLUME CONTROL

FADER CONTROLS FRONT BACK

LEFT LEFT

RIGHT RIGHT

TREBLE

OTHER

1271

YOU ARE LISTENING TO

AM 107.8

AM 103.5

AM 98.6

AM 10.70

AM 91.2

AM 89.9

FM 91.2

FM 102.7

FM 107.90

FM 98.1

FM 96.4

FM 91.4

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